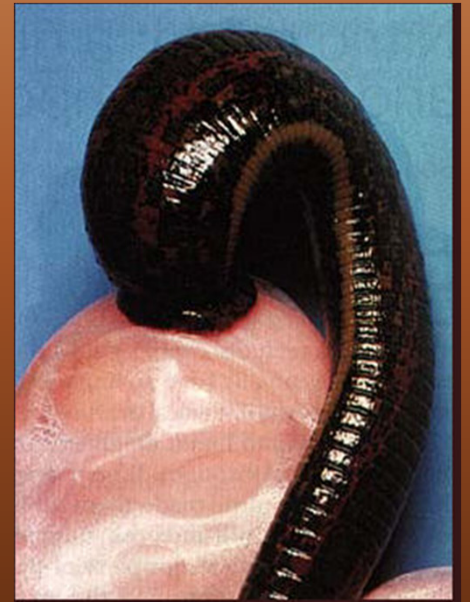


ANNELIDS

Examples

- Earthworms and blackworms
- Bristle worms (sandworms and seafloor worms)
- Leeches (parasitic)



General Characteristics

- Many linked sections called **segments**
 - Separated by **septa**
- **Bilateral symmetry** =
 - Body plan with **2** similar halves (mirror images)
- Habitat
 - Live in nearly all environments
 - Most live in burrows or tubes

- Food
 - Filter feeders and scavengers
- Reproduction
 - Sexual
 - **Regeneration** = The process by which certain organisms produce new body parts

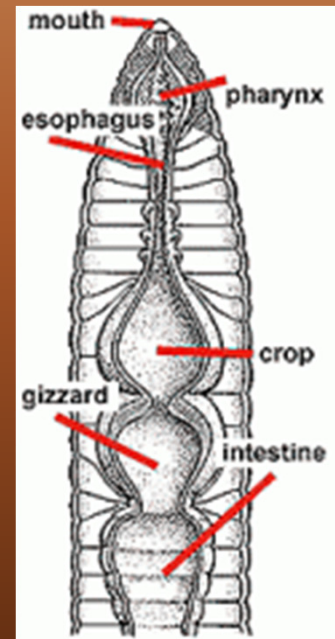


External Anatomy

- **Anterior**- “head”, closer to clitellum, contains sensory organs
- **Posterior**- toward rear or “tail”
- **Dorsal**- upper surface or “back”, darker
- **Ventral**- lower surface or “front”

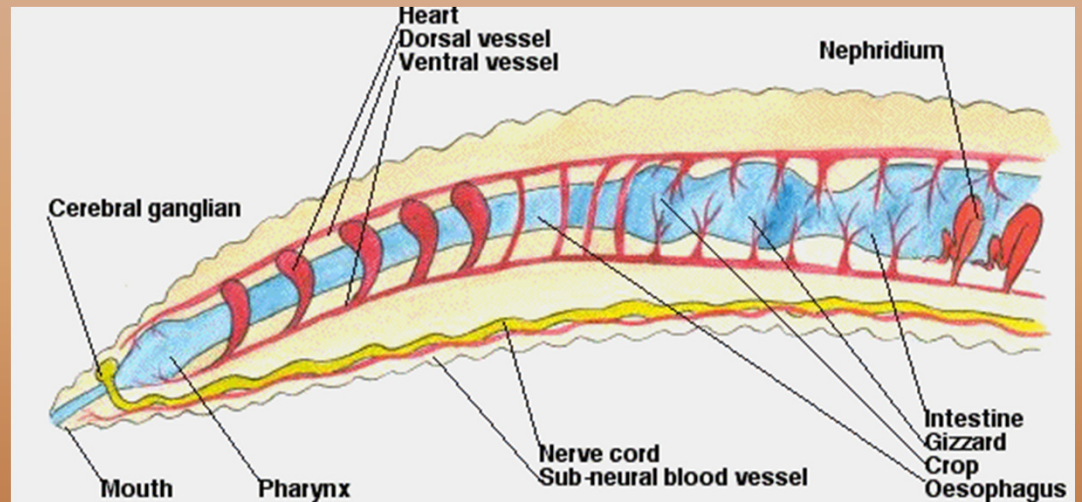
Organs and Organ Systems

- Continuous digestive system
 1. Mouth
 2. **Pharynx** – used to suck in soil
 3. **Esophagus** – food particles/soil travel here
 4. **Crop** – stores food
 5. **Gizzard** – grinds food
 6. Intestines
 7. Anus



- Closed circulatory system

- 5 pairs of hearts
- Dorsal blood vessel
- Ventral blood vessel



- Well developed nervous system
 - **Ganglia** – group of nerve cells (also called brain)
 - Ventral nerve cord
- Excretory system
 - **Nephridia** – get rid of wastes

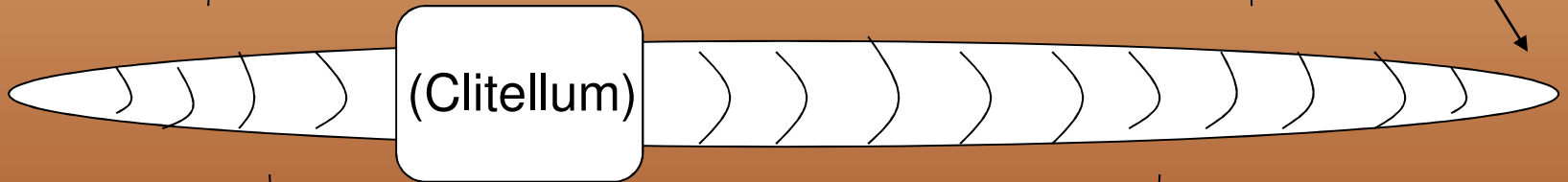
ANTERIOR

POSTERIOR

DORSAL

(Clitellum)

VENTRAL



Blackworm

- Scientific name
 - *Lumbriculus variegatus*
- Habitat
 - Shallow edges of ponds, marshes, lakes in North America and Europe
- Movement
 - To swim – twists like corkscrew
 - **Chaetae** – tiny hairs on each segment

- Regeneration of head or tail
 - 2 to 3 weeks
 - New segments are smaller and paler than originals
- Gas exchange
 - When tail is exposed to air (above water)
 - Note: Photoreceptors detect shadows

Earthworm

- Scientific name
 - *Lumbricus terrestris*
- Habitat
 - Soil of North America and Europe
- Movement
 - **Longitudinal muscles**
 - Contract to make the worm short and fat
 - **Circular muscles**
 - Contract to make the worm long and thin
 - **Setae**
 - Tiny hairs on each segment that act like anchors

- Reproduction
 - Hermaphroditic but does NOT self fertilize
 - Ovaries AND Testes
 - **Clitellum**
 - Bulge near earthworm's anterior end
 - Produces mucus that forms a cocoon for eggs
 - Only the part with the clitellum can regenerate
- Value of earthworms
 - Fertilize, till, and aerate soil